



D2 Would Blunt Blades Cut Knife Crime?

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Learning Overview: After attending this presentation, attendees will understand how a knife tip profile affects the penetration ability of knives in stabbing attacks.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by demonstrating how knives can be manufactured or altered to modify the tip profile and to make them less dangerous as weapons.

Knife crime continues to be a significant issue in the United Kingdom and other countries where guns are not readily available. In 2009, Deputy Chief Constable Alf Hitchcock of the Metropolitan police, the National Lead for Knife Crime, was quoted as saying, “Knife manufacturers can reduce deaths on our streets by making blades with blunt tips.” This referred to research conducted by Hainsworth, Delaney, and Ruty that showed that sharpness of the tip of a knife was important in determining how much force was required for it to penetrate into the body.¹ More recently, retiring Luton Crown Court Judge Mudge proposed a nationwide program to file down the points of kitchen knives to solve the “country’s soaring knife crime epidemic.”² In his valedictory address, Judge Mudge called on the government to ban the sale of large, pointed kitchen knives over his concern that carrying a knife had become routine in some circles. The Judge noted that “the use of headline grabbing Rambo knives and samurai swords was relatively rare and it was the points of ordinary kitchen knives that was causing the soaring loss of life among youngsters.”² The Judge went on to “urge all those with any role in relation to knives—manufacturers, shops, the police, local authorities, the government—to consider preventing the sale of long pointed knives, except in rare, defined circumstances, and replacing such knives with rounded ends.”² He further suggested that “the police could organize a program whereby the owners of kitchen knives, which have been properly and lawfully bought for culinary purposes, could be taken somewhere to be modified, with the points being ground down into rounded ends.”²

Therefore, the goal of the research in this presentation is to determine the ideal tip on a knife to make kitchen knives less effective as stabbing implements. Ordinary kitchen knives have had their tips modified; this study has tested their ability to penetrate the skin when used for stabbing. The research took ten ordinary kitchen knives available from commercial manufacturers and changed the tip profiles by grinding the ends. A series of tests have been conducted with the knives using quasi-static penetration testing to test the force required for penetration with the varying knife profiles and stabbing into a dynamometer to see whether penetration of pork skin was possible with the modified knife tip profiles and recording the force that was required.

In addition to testing the knives for penetration, this study assessed the utility of the knives as kitchen implements after removing the tip, with a series of user trials.

The results show that rounding the tips of knives is effective in reducing their ability to be used as effective stabbing weapons, while demonstrating that they are still effective for cutting in domestic kitchen usage.

Reference(s):

1. S.V. Hainsworth, R.J. Delaney, G.N. Ruty. How Sharp Is Sharp? Towards Quantification of the Sharpness and Penetration Ability of Kitchen Knives Used in Stabbings. *International Journal of Legal Medicine* 122, no. 4 (2008) 281.
2. Laura Forsyth. Judge Calls for 10in Pointed Kitchen Knives to Be Ground Down to a Rounded End After Hearing Three Serious Stabbing Cases in Last Three Months. *Mail Online* May 27, 2018, <http://www.dailymail.co.uk/news/article-5776629/Judge-calls-draastic-rethink-way-use-knives-kitchens-stabbing-cases.html>.

Stabbing, Knives, Sharpness